Chapter 10

Crash Studies

Definitions

Study: locating crashes at a particular location based on pre-determined criteria

Study (initial): crashes identified by the system for the given criteria but not yet verified

Study (final): crashes identified by the system for the given criteria and verified through the fiche report and crash review

Y-Line: the distance along an intersecting route

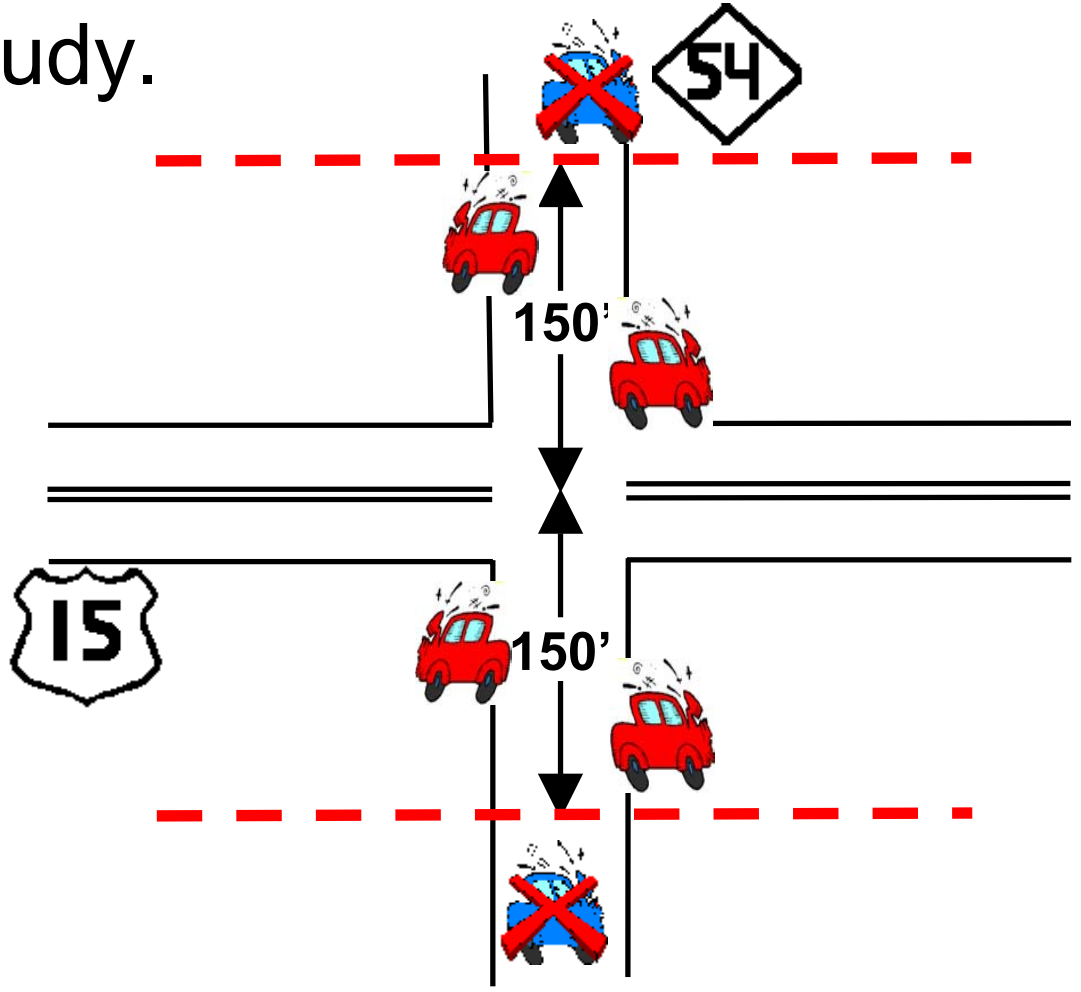
Analysis: identification of trends, frequencies, rates, and other crash information used to develop countermeasures and assist in the mitigation of crash-related issues

Y-Line

A Y-line is a specified distance along an intersecting route from the mainline route. Mileposted crashes that occur within a given Y-Line distance will be included in a TEAAS study.

Y-Line Example:

For a crash study on US 15 with a 150 foot Y-Line, crashes that occurred within 150 feet of US 15 are included in the study.



General Questions

- **Why** is the location being studied (fatality, crash frequency, pedestrians, etc.)?
- **Where** is the location (county, city, ETJ, etc.)?
- **What** is the location (intersection, strip, bridge, interchange, etc.)?
- **What** is the Y-line?
- **When** is the location to be studied (time frame - beginning and ending dates)?

Location Information

- Study the location (local knowledge, maps, etc.)
- Identify all affected routes (high order and low order)
- Review the mileposting for the identified routes
- Identify traffic volumes (AADT) on the affected routes

General Steps

- Determine why the study is being completed and all applicable parameters.

- Determine all the location information.

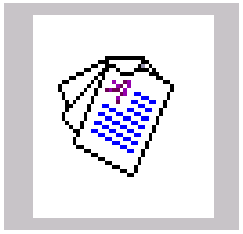
- Generate the initial study.

- Generate a fiche report and review the crashes. Verify crash information on the initial study and adjust as necessary

- Generate the final study.

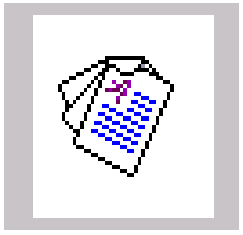
Crash Studies - Main Screens

- Access the crash study screens by selecting the following:



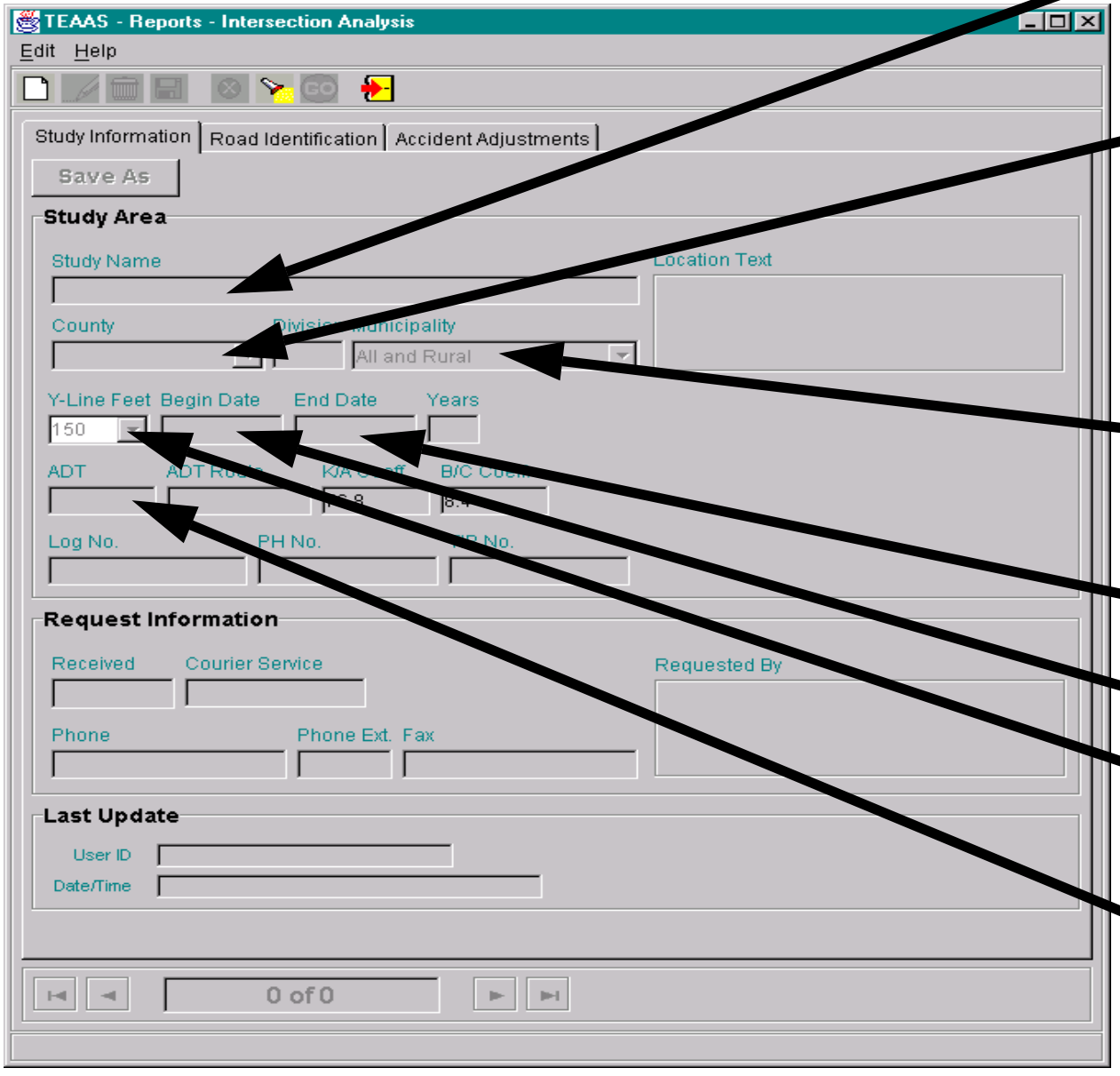
⇒ Intersection Analysis Report

- OR -



⇒ Strip Analysis Report

Study Information Tab (Main Screen)



Unique name given to the study criteria.

County

Text description of study location

Municipality

Ending date of study

Beginning date of study

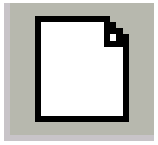
Y-Line value for study

Annual Average Daily Traffic (AADT) count

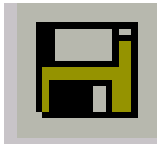
Study Information Tab (Cont.)

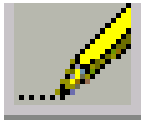
- **AADT Route 8**-digit code identifying the route AADT was taken
- **K/A Coeff** Default value of 76.8 (Should not be altered)
- **B/C Coeff** Default value of 8.4. (Should not be altered)
- **Log No.** Number assigned by the User to identify the study
- **PH No.** Number used by the Highway Safety Improvement Program to track potentially hazardous (PH) locations
- **TIP No.** Number assigned by the Division of Highways to track Transportation Improvement Program (TIP) projects
- **Received Date** date the study was requested
- **Courier Service** NCDOT courier address for the requestor
- **Requested By** Person/Organization requesting the study
- **Phone Requestor's** Phone number of the requestor
- **Phone Ext.** Phone extension of the requestor
- **Fax** Requestor's fax number

General Study Functions

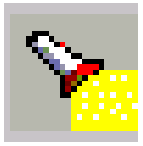
- **To create a new study:**
  - Click the **"New"** icon 

    Note: If modifying an existing study, first save the existing study, or else the information on the existing study may be lost.

- **To save a study:**
  - Click the **"Save"** icon 
  - Study is saved and displayed in "view" mode
  - If the study being saved was created by another user, it must be saved under another name

    Note: If additional modifications are to be made to the saved report, click the **"Modify"** icon. 

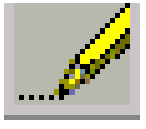
General Study Functions (Cont.)

- **To search for a study:**
  - Click the **"Search"** icon 

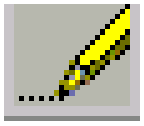
    The following fields are valid search criteria:

Study Name	TIP No.
Location Text	County
Log No	User ID

  - Enter the information you want to search by (use wildcards if needed)
  - Click the **"GO"** icon

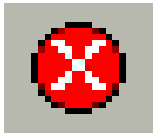
    Note: If modifications are to be made to searched studies, click the **"Modify"** icon 

General Study Functions (Cont.)

- **To modify an existing study:**
  - Click the **"Modify"** icon 

    (This is necessary when a study is displayed in view mode and modifications need to be made or reports are to be run)

- **To delete an existing study:**
  - Click the **"Delete"** icon
  - Click **"Yes"** in the confirmation dialog box

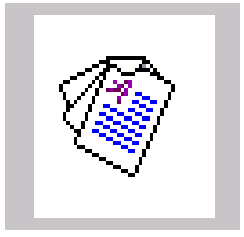
- **Canceling a study operation:**
  - Click the **"Cancel"** icon 

    (this returns all values in the "Study Information" tab screen to the values from the last save)

Codes Index Report

- The “Fiche, Intersection, and Strip Reports Code Index” serves as a legend for codes that appear on the fiche, intersection, and strip reports.

- Access the “Fiche, Intersection, and Strip Reports Code Index” report by selecting the following:



⇒ Fiche, Intersection, and Strip Reports Code Index

Codes Index Report Example

North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Fiche, Intersection, and Strip Reports Code Index

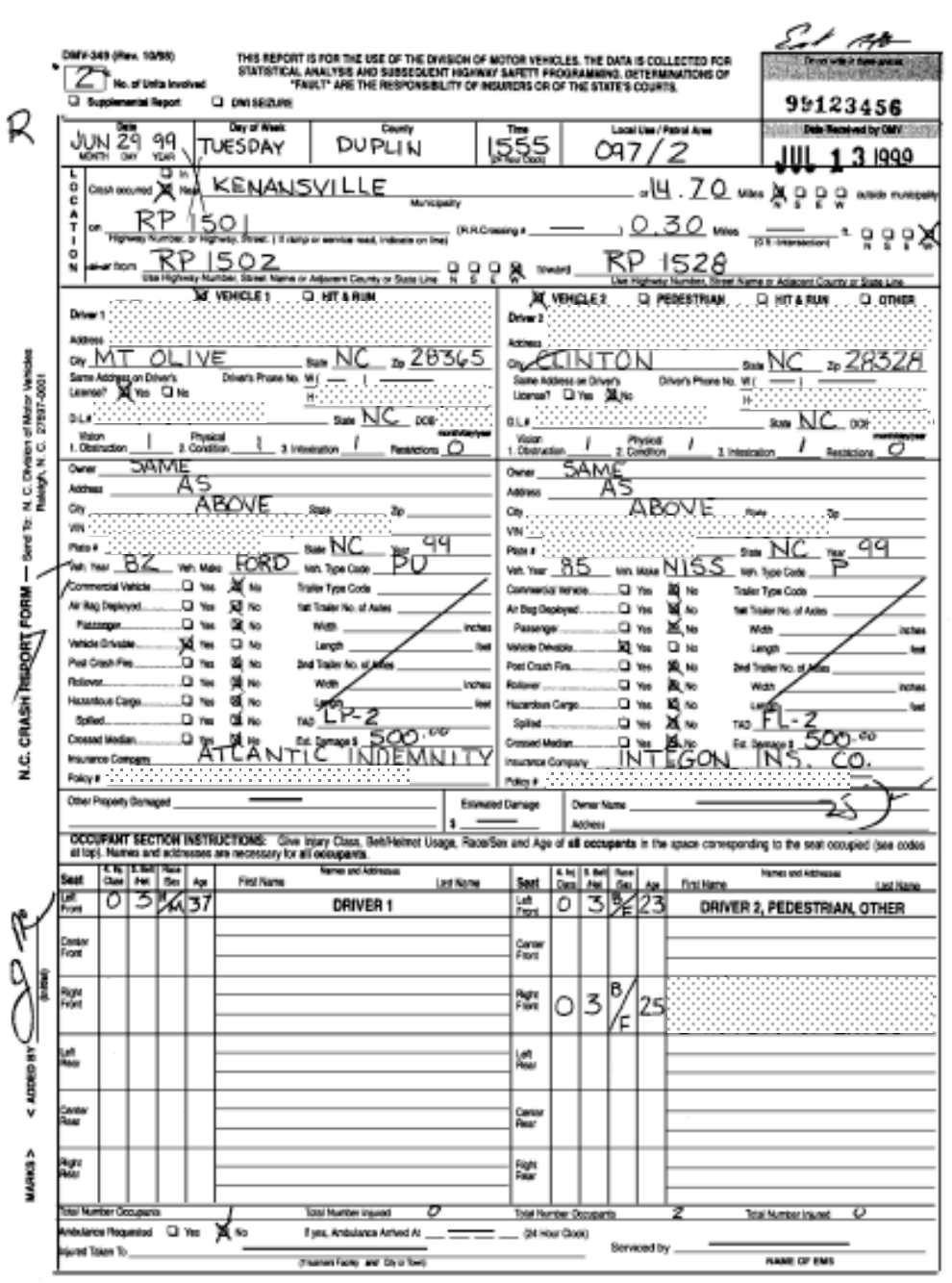
T - Type of Accident Codes

0 = UNKNOWN
1 = RAN OFF ROAD - RIGHT
2 = RAN OFF ROAD - LEFT
3 = RAN OFF ROAD - STRAIGHT
4 = JACKKNIFE
5 = OVERTURN/ROLLOVER
13 = OTHER NON-COLLISION
14 = PEDESTRIAN
15 = PEDALCYCLIST
16 = RR TRAIN, ENGINE
17 = ANIMAL
18 = MOVABLE OBJECT
19 = FIXED OBJECT
20 = PARKED MOTOR VEHICLE
21 = REAR END, SLOW OR STOP
22 = REAR END, TURN
23 = LEFT TURN, SAME ROADWAY
24 = LEFT TURN, DIFFERENT ROADWAYS
25 = RIGHT TURN, SAME ROADWAY
26 = RIGHT TURN, DIFFERENT ROADWAYS
27 = HEAD ON
28 = SIDESWIPE, SAME DIRECTION
29 = SIDESWIPE, OPPOSITE DIRECTION
30 = ANGLE
31 = BACKING UP
32 = OTHER COLLISION WITH VEHICLE

F - Road Feature Codes

0 = NO SPECIAL FEATURE
1 = BRIDGE
2 = BRIDGE APPROACH
3 = UNDERPASS
4 = DRIVEWAY, PUBLIC
5 = DRIVEWAY, PRIVATE
6 = ALLEY INTERSECTION
7 = FOUR-WAY INTERSECTION
8 = T-INTERSECTION
9 = Y-INTERSECTION
10 = TRAFFIC CIRCLE/ROUNDABOUT
11 = FIVE-POINT, OR MORE
12 = RELATED TO INTERSECTION
13 = NON-INTERSECTION MEDIAN CROSSING
14 = END OR BEGINNING - DIVIDED HIGHWAY
15 = OFF RAMP ENTRY
16 = OFF RAMP PROPER
17 = OFF RAMP TERMINAL ON CROSSROAD
18 = MERGE LANE BETWEEN ON AND OFF RAMP
19 = ON RAMP ENTRY
20 = ON RAMP PROPER
21 = ON RAMP TERMINAL ON CROSSROAD
22 = RAILROAD CROSSING
23 = TUNNEL
24 = SHARED-USE PATHS OR TRAILS
25 = OTHER

DMV-349 Crash Report



DMV-349 (Rev. 10/98)

2 No. of Units Involved

☐ Supplemental Report ☐ DWI SEIZURE

THIS REPORT IS FOR THE USE OF THE DIVISION OF MOTOR VEHICLES. THE DATA IS COLLECTED FOR STATISTICAL ANALYSIS AND SUBSEQUENT HIGHWAY SAFETY PROGRAMMING. DETERMINATIONS OF "FAULT" ARE THE RESPONSIBILITY OF INSURERS OR OF THE STATE'S COURTS.

Do not write in these areas

99123456

Date Received by DMV: JUL 13 1999

Date (MONTH DAY YEAR)	Day of Week	County	Time (24 Hour Clock)	Local Use / Patrol Area
JUN 29 99	TUESDAY	DUPLIN	1555	097/2

LOCATION

Crash occurred ☐ In ☒ Near KENANSVILLE (Municipality) at 14.70 Miles ☒ N ☐ S ☐ E ☐ W outside municipality

on RP 1501 (Highway Number, or Highway, Street. If ramp or service road, indicate on line) (R.R.Crossing # ——) 0.30 Miles —— (0.5 Intersection) ft. ☐ N ☐ S ☐ E ☒ W

driver from RP 1502 (Use Highway Number, Street Name or Adjacent County or State Line) ☐ N ☐ S ☐ E ☒ W toward RP 1528 (Use Highway Number, Street Name or Adjacent County or State Line)

☒ VEHICLE 1 ☐ HIT & RUN	☒ VEHICLE 2 ☐ PEDESTRIAN ☐ HIT & RUN ☐ OTHER
Driver 1	Driver 2
Address	Address
City MT OLIVE State NC Zip 28365	City CLINTON State NC Zip 28328
Same Address on Driver's License? ☒ Yes ☐ No Driver's Phone No. W ( ) H	Same Address on Driver's License? ☐ Yes ☒ No Driver's Phone No. W ( ) H
D.L.# State NC DOB	D.L.# State NC DOB
Vision 1. Obstruction 1 Physical 2. Condition 1 3. Intoxication 1 Restrictions 0 (month/day/year)	Vision 1. Obstruction 1 Physical 2. Condition 1 3. Intoxication 1 Restrictions 0 (month/day/year)
Owner SAME	Owner SAME
Address AS	Address AS
City ABOVE State Zip	City ABOVE State Zip
VIN	VIN
Plate # State NC Year 99	Plate # State NC Year 99
Veh. Year 82 Veh. Make FORD Veh. Type Code PU	Veh. Year 85 Veh. Make NISS Veh. Type Code P
Commercial Vehicle ☐ Yes ☒ No Trailer Type Code	Commercial Vehicle ☐ Yes ☒ No Trailer Type Code
Air Bag Deployed ☐ Yes ☒ No 1st Trailer No. of Axles	Air Bag Deployed ☐ Yes ☒ No 1st Trailer No. of Axles
Passenger ☐ Yes ☒ No Width inches	Passenger ☐ Yes ☒ No Width inches
Vehicle Drivable ☒ Yes ☐ No Length feet	Vehicle Drivable ☒ Yes ☐ No Length feet
Post Crash Fire ☐ Yes ☒ No 2nd Trailer No. of Axles	Post Crash Fire ☐ Yes ☒ No 2nd Trailer No. of Axles
Rollover ☐ Yes ☒ No Width inches	Rollover ☐ Yes ☒ No Width inches
Hazardous Cargo ☐ Yes ☒ No Length feet	Hazardous Cargo ☐ Yes ☒ No Length feet
Spilled ☐ Yes ☒ No TAD LP-2	Spilled ☐ Yes ☒ No TAD FL-2
Crossed Median ☐ Yes ☒ No Est. Damage $ 500.00	Crossed Median ☐ Yes ☒ No Est. Damage $ 500.00
Insurance Company ATLANTIC INDEMNITY	Insurance Company INTEGON INS. CO.
Policy #	Policy #

Other Property Damaged —— Estimated Damage $ —— Owner Name —— Address

OCCUPANT SECTION INSTRUCTIONS: Give Injury Class, Belt/Helmet Usage, Race/Sex and Age of **all occupants** in the space corresponding to the seat occupied (see codes at top). Names and addresses are necessary for all occupants.

Seat	A. Inj. Class	B. Belt/Hel.	Race/Sex	Age	Names and Addresses First Name Last Name	Seat	A. Inj. Class	B. Belt/Hel.	Race/Sex	Age	Names and Addresses First Name Last Name
Left Front	0	3	B/M	37	DRIVER 1	Left Front	0	3	B/F	23	DRIVER 2, PEDESTRIAN, OTHER
Center Front						Center Front					
Right Front						Right Front	0	3	B/F	25	
Left Rear						Left Rear					
Center Rear						Center Rear					
Right Rear						Right Rear					

Total Number Occupants 1 Total Number Injured 0 Total Number Occupants 2 Total Number Injured 0

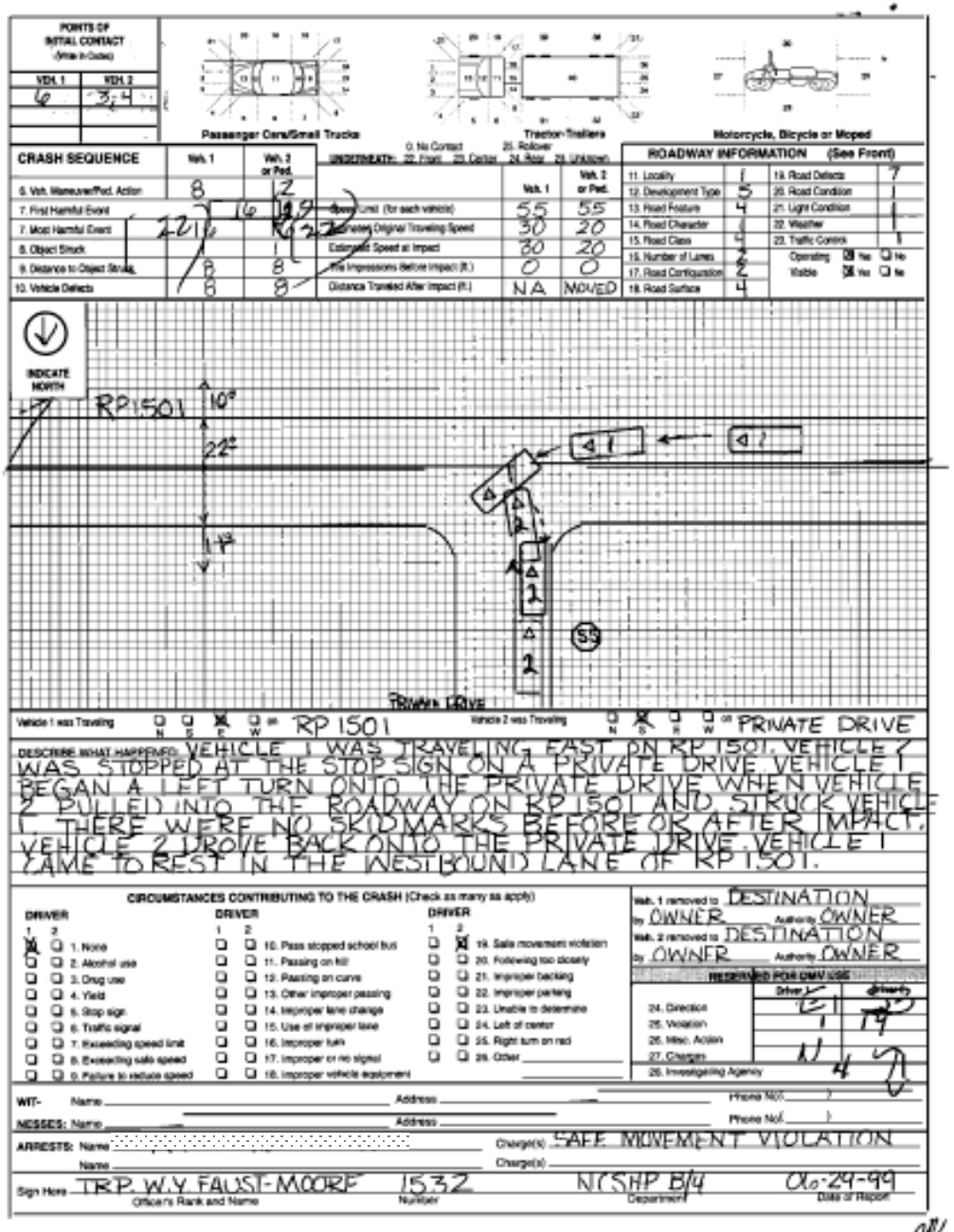
Ambulance Requested ☐ Yes ☒ No If yes, Ambulance Arrived At —— (24 Hour Clock)

Injured Taken To (Treatment Facility and City or Town) Serviced by NAME OF EMS

N.C. CRASH REPORT FORM — Send To: N. C. Division of Motor Vehicles Raleigh, N. C. 27697-0001

MARKS > < ADDED BY (Initial)

DMV-349 Crash Report (Cont.)



POINTS OF INITIAL CONTACT (Write in Codes)

VEH. 1	VEH. 2
6	3,4

Passenger Cars/Small Trucks — Tractor-Trailers — Motorcycle, Bicycle or Moped

UNDERNEATH: 0. No Contact 22. Front 23. Center 24. Rear 25. Rollover 26. Unknown

CRASH SEQUENCE	Veh. 1	Veh. 2 or Ped.
6. Veh. Maneuver/Ped. Action	8	12
7. First Harmful Event	16	19
7. Most Harmful Event	22	16
8. Object Struck	1	1
9. Distance to Object Struck	8	8
10. Vehicle Defects	8	8

	Veh. 1	Veh. 2 or Ped.
Speed Limit (for each vehicle)	55	55
Estimated Original Traveling Speed	30	20
Estimated Speed at Impact	30	20
Tire Impressions Before Impact (ft.)	0	0
Distance Traveled After Impact (ft.)	NA	MOVED

ROADWAY INFORMATION (See Front)

11. Locality	1	19. Road Defects	7
12. Development Type	5	20. Road Condition	1
13. Road Feature	4	21. Light Condition	1
14. Road Character	1	22. Weather	1
15. Road Class	4	23. Traffic Control	1
16. Number of Lanes	2	Operating ☒ Yes ☐ No	
17. Road Configuration	2	Visible ☒ Yes ☐ No	
18. Road Surface	4		

Vehicle 1 was Traveling ☐ N ☐ S ☒ E ☐ W on RP 1501 — Vehicle 2 was Traveling ☐ N ☒ S ☐ E ☐ W on PRIVATE DRIVE

DESCRIBE WHAT HAPPENED: VEHICLE 1 WAS TRAVELING EAST ON RP 1501. VEHICLE 2 WAS STOPPED AT THE STOP SIGN ON A PRIVATE DRIVE. VEHICLE 1 BEGAN A LEFT TURN ONTO THE PRIVATE DRIVE WHEN VEHICLE 2 PULLED INTO THE ROADWAY ON RP 1501 AND STRUCK VEHICLE 1. THERE WERE NO SKIDMARKS BEFORE OR AFTER IMPACT. VEHICLE 2 DROVE BACK ONTO THE PRIVATE DRIVE. VEHICLE 1 CAME TO REST IN THE WESTBOUND LANE OF RP 1501.

CIRCUMSTANCES CONTRIBUTING TO THE CRASH (Check as many as apply)

DRIVER 1	DRIVER 2		DRIVER 1	DRIVER 2		DRIVER 1	DRIVER 2	
☒	☐	1. None	☐	☐	10. Pass stopped school bus	☐	☒	19. Safe movement violation
☐	☐	2. Alcohol use	☐	☐	11. Passing on hill	☐	☐	20. Following too closely
☐	☐	3. Drug use	☐	☐	12. Passing on curve	☐	☐	21. Improper backing
☐	☐	4. Yield	☐	☐	13. Other improper passing	☐	☐	22. Improper parking
☐	☐	5. Stop sign	☐	☐	14. Improper lane change	☐	☐	23. Unable to determine
☐	☐	6. Traffic signal	☐	☐	15. Use of improper lane	☐	☐	24. Left of center
☐	☐	7. Exceeding speed limit	☐	☐	16. Improper turn	☐	☐	25. Right turn on red
☐	☐	8. Exceeding safe speed	☐	☐	17. Improper or no signal	☐	☐	26. Other
☐	☐	9. Failure to reduce speed	☐	☐	18. Improper vehicle equipment			

Veh. 1 removed to DESTINATION by OWNER Authority OWNER
Veh. 2 removed to DESTINATION by OWNER Authority OWNER

RESERVED FOR DMV USE

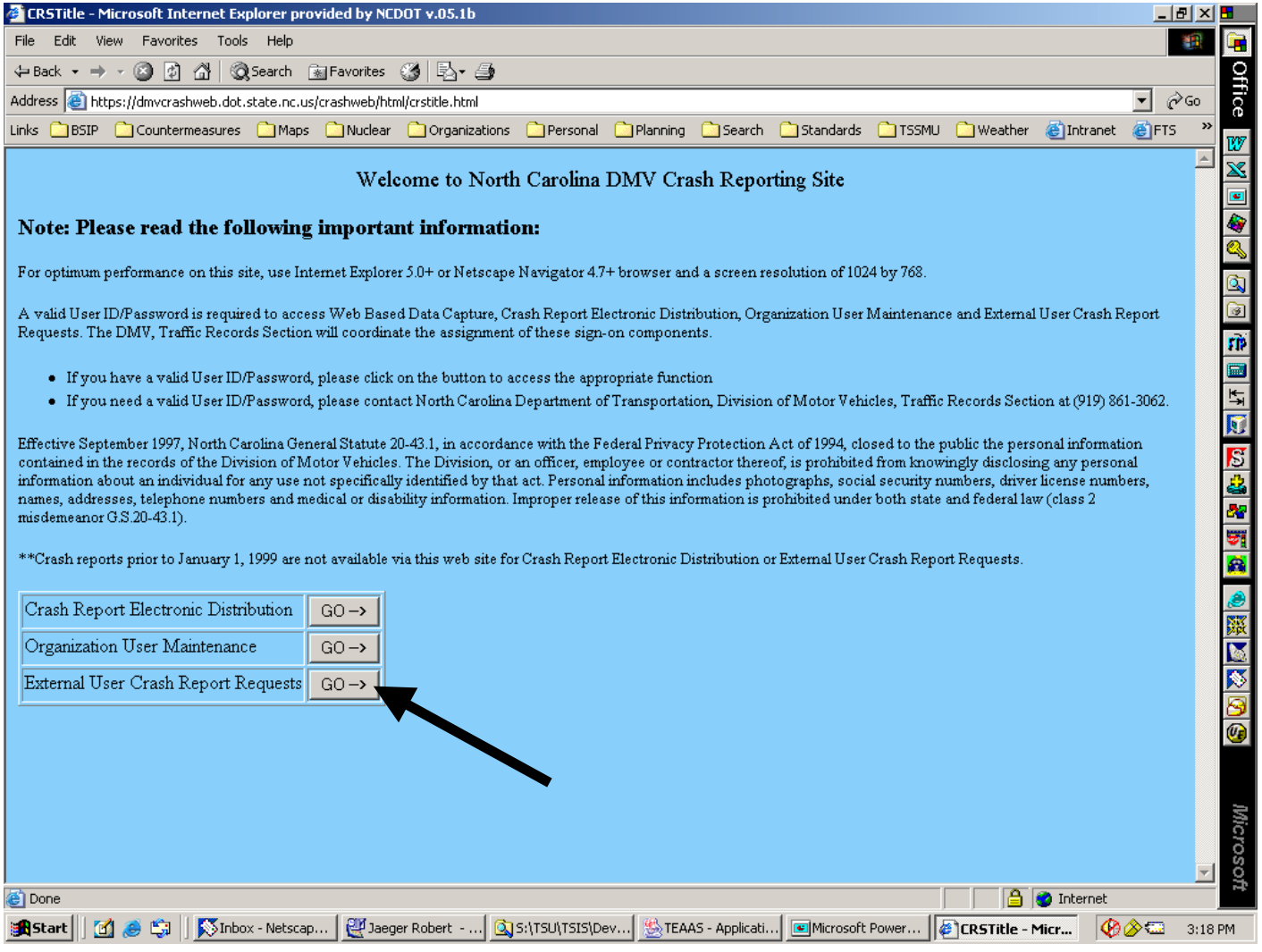
	Driver 1	Driver 2
24. Direction	E1	3
25. Violation	1	19
26. Misc. Action		
27. Charges	N	
28. Investigating Agency	4	

WIT- Name _____ Address _____ Phone No. ( )
NESSES: Name _____ Address _____ Phone No. ( )
ARRESTS: Name _____ Charge(s) SAFE MOVEMENT VIOLATION
Name _____ Charge(s) _____

Sign Here TRP. W.Y. FAUST-MOORE (Officer's Rank and Name) 1532 (Number) NCSHP B/4 (Department) 06-29-99 (Date of Report)

DMV Crash Reporting Site

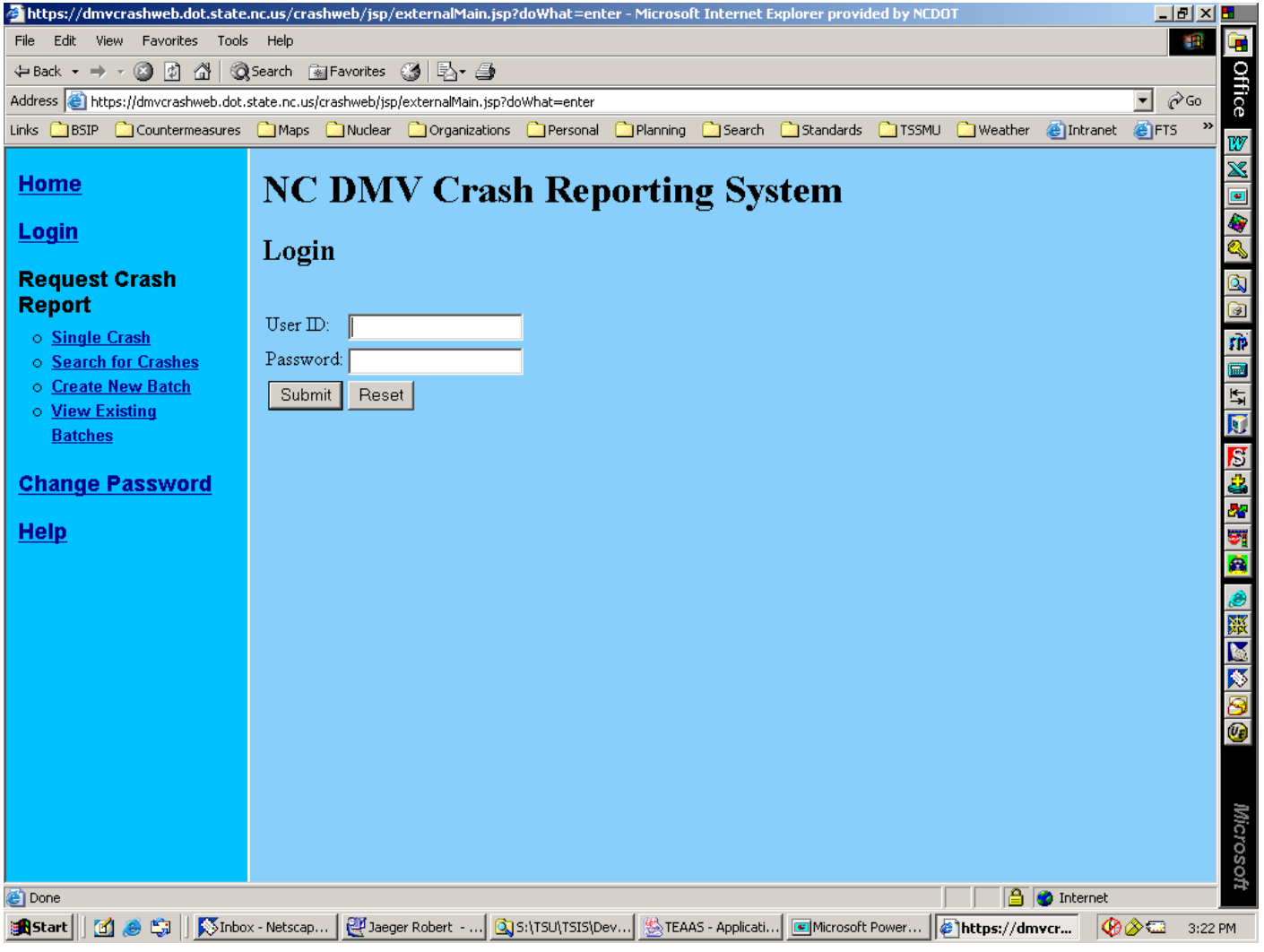
Go to the DMV Crash Reporting Site to review crash reports on-line and log on as an external user.

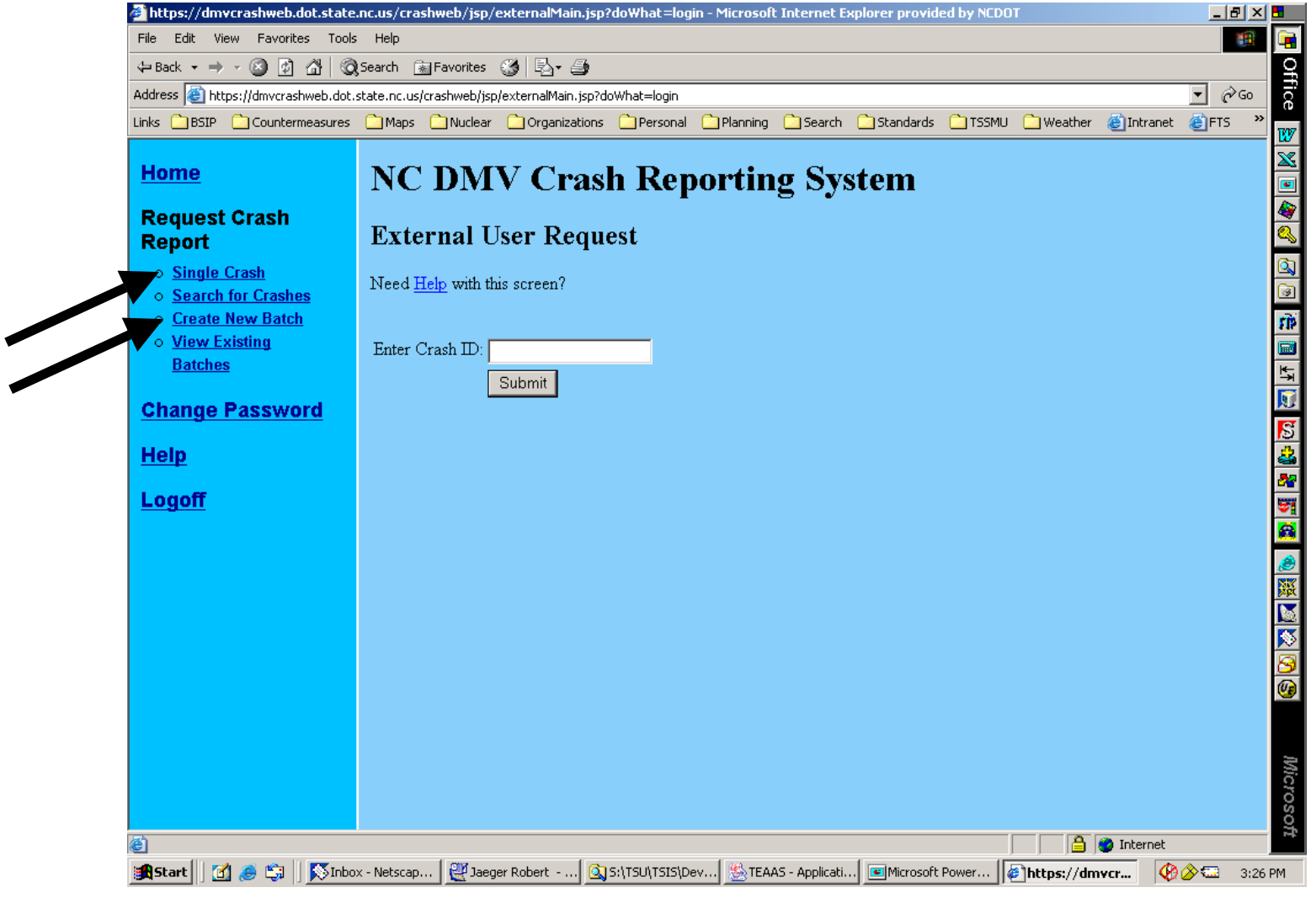


https://dmvcrashweb.dot.state.nc.us/crashweb/html/crstitle.html

DMV Crash Reporting Site (Cont.)

Enter your user ID and password and click the **“Submit”** button.



DMV Crash Reporting Site (Cont.)

Search for a single crash or create a new batch (list of crashes).